1983 ANNUAL REPORT
OFFICE OF DATA PROCESSING

I. ODP 1983 OVERVIEW

The year 1983 was another year of continued progress and exciting change for the Office of Data Processing (ODP). Significant strides were made in satisfying the ever expanding ADP requirements levied on ODP by CIA and Intelligence Community customers. The automatic data processing (ADP) environment continued to change at an exploding rate. The capabilities and benefits of new technologies, such as office automation, networking, and personal computers have become familiar concepts as more and more mangers sought to put them to good use. At the same time, the importance and scope of the Agency's role in national security affairs continued to be enhanced. ODP customers had rising expectations and looked to ADP technology to solve many of their productivity and effectiveness problems. This atmosphere presented challenges and opportunities in 1983. We foresee the same similarities throughout the Eighties. In order to better address ODP's role in bringing the benefits of ADP technology to its Agency and Intelligence Community customers, a strategic plan was developed which emphasizes serving these needs in new and imaginative ways.

The major ODP accomplishment of 1983 was the delivery of not only the SAFE Early Capability, but the first major enhancement as well. In 1983, the SAFE system reached beyond the CIA analyst to supporting DIA analysts. Significant progress was also made toward the SAFE deliverables for 1984 and 1985.

The contract for word processing and office automation equipment with Wang Laboratories was established toward the end of 1982, however, it was during 1983 that Wang Systems were installed in large numbers throughout the Agency. Significant progress was also made in increasing Agency-wide awareness to the AIM electronic mail system. The computer system on which AIM operates has nearly [ ] registered users of which [ ] use this mail service. Because of this wide-spread acceptance of the mail service and its potential user base, OT&E has assumed the responsibility for Agency AIM training. 25X1 25X1

Other software development activities continued at a rapid pace in 1983. The CAMS2 processing segment software was completed, and testing began. The computer center [redacted] 25X1
[redacted] experienced a hardware upgrade with ODP personnel 25X1
now providing multiple shift support. Progress was also made in other major development activities, such as LIMS, DESIST and ACIS. The DESIST and LIMS development contracts were awarded to Booz, Allen and Hamilton. Further, the ACIS high level design was completed by ODP analysts and the 4C project was delivered.

Processing service activities also continued expanding at a rapid rate. Mainframe installations and replacements increased the capacity and productivity of the computer centers. The introduction of the laser printer clusters and a large number of terminal and printer installations combined to assist remote use of ODP's facilities. Additionally, a new capability to transfer data between the Wang systems and the central services enabled users to increase their productivity.

Production statistics in 1983 continued the upward trend. In particular, concurrent VM users increased significantly while availability/reliability improved as well, exceeding 98% for Batch and CAMS, and 99% for VM.

ODP's relationships with its customers were excellent in 1983. We take pride in seeking and maintaining generally harmonious relationships with internal CIA customers as well as external customers such as DIA (SAFE) and the Intelligence Community Staff (CAMS). In order to further improve these relationships, and to cope with ever increasing demands for the services and expertise from data processing professionals, ODP began the process of reorganization. The reorganization, which is a direct result of the ODP Strategic Plan, emphasizes service -- seeking to assist our customers in effective and imaginative ways.

ODP requirements continue to increase. Our projected resource needs for upcoming fiscal years show growth primarily in the personnel area and for hardware enhancements. During FY 1984 and FY 1985, [redacted] additional 25X1
personnel will be required for new application development tasks, SAFE, and CAMS operations support. In the hardware arena, continuing growth in workload availability/reliability requirements will necessitate two mainframe acquisitions with associated peripherals.

II. BACKGROUND

The Office of Data Processing is responsible for providing data processing services for the CIA and certain elements of the Intelligence Community. Under its new organization, ODP consists of five operational components: Processing Services Group, which is responsible for the management of the Agency office automation program, and the management and operation of three large Headquarters computer centers, a small specialized Headquarters center (4C), [redacted] 25X1
[redacted] Consulting and Assistance Group, 25X1
which is responsible for facilitating the exploitation of information processing technology by users of ODP-provided systems; Intelligence Systems Group, which is responsible for the joint CIA-DIA Project SAFE (Support for the Analysts' File Environment) and other CIA information processing applications that have functional requirements and capabilities similar to SAFE; Management Information Systems Group, which is responsible for developing and maintaining ADP management and information systems which in turn support the missions of Agency Components; and the Special Systems Group, which is responsible for developing and maintaining Agency compartmented ADP computer systems for the Intelligence Community.

The ODP Processing Services Group includes approximately [redacted] personnel in support of an extremely dynamic and 25X1
complex computer center environment. The Ruffing Center, where general-purpose Agency computing is performed, ended 1983 with a total of six large scale IBM-compatible mainframe computers and 194 billion characters of on-line storage. Support to the Directorate of Operations is provided from the Special Center. In addition, the Special Center houses the COMIREX Automated Management System (CAMS), which is the computer system for the imagery side of the National Reconnaissance Program. The Special Center, at the close of 1983, had four IBM-compatible mainframes and 63 billion characters of on-line storage. The third center, the Northside or SAFE Center, contained six large IBM mainframes and 66 billion characters of on-line storage. (Table I presents a summary of ODP computer facilities and associated ADP resources.)

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III. 1983 PERFORMANCE HIGHLIGHTS

New Services

Last year, 1983, was again a very dynamic year for the Office of Data Processing. The office operates in, and is an integral part of, an ever changing technological environment. With continuing advances in information processing, technical and managerial changes are the norm rather than the exception. One example of this advancing technology and the resulting potential opportunities to improve Agency productivity is the commercial availability of secure, cost-effective office automation and word processing equipment. In the first full year of the contract with Wang for a family of word processors,

[redacted] 25X1

The Information Center was established to promote the effective use of ODP's general computer services by end users. Principal activities included training, information dissemination, consultation, assistance, assessment, and acquisition of new and improved fourth generation software tools. Special project areas included generalized graphics support, microcomputer hardware/software evaluation and assistance, coordination of distributed Xerox 2700 laser printers, and Wang word processor support.

Intelligence Systems Group

SAFE

The joint CIA-DIA SAFE program included several major accomplishments in 1983. In 1982 the SAFE program was redirected to provide intelligence analysts with an early capability. This capability, which took advantage of existing software and minimized development activities, became known as Early Capability and was made available to CIA and DIA in March and June 1983, respectively.

The SAFE Early Capability provides Pilot Mail Operations to a community of up to [redacted] DI analysts. These 25X1
analysts are able to receive relevant intelligence message traffic on-line, in a timely fashion. With Early Capability, the analysts are able to scan and search incoming messages, and

subsequently file messages or route them to other analysts for review. Analysts also have the capability to create and edit reports and memoranda on-line, and route or print items as required. SAFE Early Capability is a significant automated tool for the intelligence analyst.

Other 1983 activities include the July installation of a computer system for the support of future SAFE development. The first enhancement to the Early Capability known as SAFE Delivery 1, was installed in late 1983. SAFE Delivery 1 provided significant improvement in the dissemination of intelligence data to analysts.

Further, significant progress was made in the software development process, culminating in successful preliminary design reviews for the software which is scheduled for 1984 and 1985. Three separate systems were placed into operation in the Northside Computer Center by the Spring of 1983. The first system, for CIA users, consisted of three mainframes; the second system, for DIA users, consisted of two mainframes. The third system, consisting of one mainframe, was installed to provide backup capacity for DIA's system and to support development of subsequent SAFE capabilities. The final construction phase of the Northside Computer Center was completed in November 1983. The magnitude of the effort required to make these installations a reality in the allowed time frame was truly remarkable.

The delivery of the next SAFE system major upgrade, the Enhanced Capability, is scheduled for October 1984; four subsequent major deliveries referred to as the Integrated Capabilities are scheduled for March 1985 through December 1987.

SPECIAL SYSTEMS GROUP

CAMS

The completion of the CAMS2 Processing Segment software and the initiation of systems testing occurred in 1983. The completion of the software was accomplished by a dramatic increase in the number of contract personnel--from 60 to 120 in three months. This requirement put a heavy strain on the Agency clearance process. It was through extraordinary efforts on the part of the Office of Security that this task was

accomplished. Once cleared, the additional staff were quickly integrated into the development process and the software was delivered on schedule. The new staffing had other impacts, like increasing the size of the development computer from an IBM/168 to and IBM/3033. This change was made without altering the ambitious schedule already underway. ODP provided multiple shift support during the software development and testing phases to further extend the system resources.

The installation of the CAMS Production and Backup processor was initiated during 1983 with the completion scheduled for January 9, 1984. This configuration includes two IBM/3081 processors installed in the Ruffing Computer Center and electrically isolated from all other systems for security reasons.

ODP's relationship with COMIREX, the customer for CAMS, is excellent. Planning and development of all post-IOC activities are now under way, with the last major upgrade scheduled for April 1988. This is representative of the ODP commitment to CAMS development and of the customer's confidence in this relationship.

Management Information Systems Group

4C

The Community-wide Computer Assisted Compartmentation Control System (4C), the Intelligence Community's special clearance database, was installed and became available for community access in early April 1983. This provided the capability to query the Agency database from twenty-five (25) community sites. By the end of 1983 six community members had full system capabilities including query, updating, and reporting. Since security regulations require an electrically-isolated computer when non-Agency customers are serviced, an Agency-owned IBM 370/158 AP was installed in a new computer site (Room 1A1020 Headquarters) to support only the 4C system.

DESIST

The Decision Support and Information System for Terrorism (DESIST) will be used in direct support of the National Security Council's crisis management function dealing with

terrorist incidents involving U.S. interests. DESIST will allow access to terrorist information by key Intelligence Community offices and operations centers. This access will provide users, at their own site, with rapid query and printing capability both in crisis management situations and for research. Total funding for the DESIST project through FY-87 including hardware and software is $8.7 million. The development contract was awarded to Booz, Allen and Hamilton in September 1982. Subsequently, Booz, Allen and Hamilton staffed the project in 1983 and finished the definition of the system. Preliminary system design is underway and the initial operating capacity is scheduled for the first quarter of 1985.

LIMS

Development activities continued on the Logistics Integrated Management System (LIMS). The detailed requirements documentation was completed, audited, and reviewed in the last quarter of FY-83. In October 1983, CTEC Inc. was awarded the LIMS quality assurance contract as a result of a competitive procurement. Additionally, the development contract was awarded to Booz, Allen and Hamilton in the last quarter of FY-83. Both the quality assurance and the development contractors are fully staffed and the project is expected to have an initial operating capability in the second quarter of FY-85 as scheduled.

ACIS

The high level design for the Automated Compensation and Information System (ACIS) was completed. The ACIS life cycle was refined to provide early relief to the Office of Finance and to effect a smoother transition to the full operating capability. The system will be delivered in six separate releases with the first scheduled for March 1984 and the last for December 1987. The delivery of the fifth release in December 1986 will replace the current bi-weekly payroll system.

Other Support Activities

In its continuing effort to provide ADP systems support to the Agency and Intelligence Community, Applications received over 616 new requests for support (up from 465 in 1982) while closing 410 during 1983.

Most of the general ADP training functions were transferred to the Information Science Center, Office of Training and Education in late 1982. ODP retained a small training capability to provide ADP professionals with specialized technical training on ODP systems. In 1983, the training staff conducted a total of 40 course offerings (19 unique) for 614 students, 75% of whom were ODP and 25% Agency-wide ADP personnel.

Processing Services Group

Word Processing

In the first full fiscal year of the contract with Wang for a family of word processors, [redacted] workstations, were ordered. The Agency-wide fiscal year cost for Wang equipment and maintenance was $14.2 million. Roughly 40% of this equipment will be installed either overseas or at locations in the U.S.--outside the local area. Support was provided to users in the areas of systems analysis, cable installation and site survey, and maintenance management. In addition, significant effort was provided to develop interface capabilities between the Wang and the central time sharing systems. 25X1

AIM

The Automatic Information Management System (AIM) was extended during the year and supported approximately [redacted] subscribers by the end of the year with over 1000 people using it daily. Calendar and search facilities were added to AIM as well as several other features. Continued growth in the use of this highly popular service is expected and has been planned for in the 1985 program. 25X1

SAFE SUPPORT

A major effort was expended in the installation and testing of the SAFE systems. Included in this success was the installation of new communication control software that had never before been used anywhere in the U.S. with the SAFE-type hardware.

Computer Center Upgrades

Two IBM 3081 and 1 IBM 3082 computer systems were installed and 2 IBM 3081 systems were upgraded to support the growth in requirements for central ADP services. These new systems continued to operate at a significantly higher reliability than other IBM and Amdahl central processors of similar technology.

The installation of IBM 3380 direct access storage devices continued during 1983 in order to replace older and smaller capacity devices and to support additional requirements. These new technology devices continued to provide higher reliability than the standard devices they replaced. Based upon the experiences over the last 6 months, the 3380's are expected to set new standards of performance.

Production Statistics

The mean number of concurrent time sharing users during peak daily periods increased by almost 50% to 672. Similarly, the mean number of daily time sharing sessions increased by about the same amount (from 3,712 to 5,537). The availability of 2 large central processors providing excellent response and the acceptance of electronic mail facilities accounted for a good portion of this dramatic increase.

The Ruffing Center batch service provided, on the average, about 100 370/168 equivalent CPU hours per day in 1983, as compared to about 80 in 1982. The mean daily number of batch jobs processed grew by about 10%.

In the data base support area, the mean daily terminal transaction rate for GIMS (including 4C) and CAMS increased 30% and 2% respectively. The number of GIMS production data bases increased from 95 to 116.

In the Special Center, the average number of DO batch jobs per week increased from 350 to 1,100 due mostly to increased development work. The STAR transaction load increased about 25%, from 60,000 to 74,000 per week.

System availability continued to improve in 1983 with the 2 largest online systems (Ruffing Center VM1 and VM2) staying up over 99% of the time.

Other Processing Services Activities

ODP made significant strides in interfaces such as exchanging documents between application software, Wang equipment, and central services. Additionally, this flexibility was enhanced by an innovative facility which allows the user to conveniently direct output to devices or other users on any connected computer regardless of the location of the destination. This permits, for example, computer output from batch jobs to be automatically printed on VM-connected laser printers and vice versa.

Support of CAMS required the development of a new DBMS capability. The new GIM-III package was provided for CAMS development and production, and represents a significant achievement. In addition, ODP has become substantially involved in several new DBMS capabilities. The most important of these is NOMAD-II which was installed to provide a powerful DBMS capability for individuals and small groups on VM.

The host-based word processor was placed in production and has attracted a large following. The software permits users of the Delta 7260/8260 terminals to perform word processing functions with an easy-to-use interface which resembles a dedicated word processor. This package was selected by the SAFE project to provide word processing capability for SAFE users. Further, a host-based 3270 emulator was created to permit an application in the DO to operate with the Delta Data 7260. An extended capability was installed to allow terminals to use both Delta Data and IBM 3270 features in a split-screen mode.

ODP completed 1750 requests for installation, relocation or exchange of computer terminals and printers. This exceeded last year's record number by nearly 700 requests.

A streamlined version of the Agency Standard Terminal was introduced. The new terminal takes advantage of new approaches to TEMPEST engineering and resulted in a significant price decrease to nearly half its former cost.

The implementing of a cluster laser printing capability, a solution to the high quality print requirements of the user population, heralded the approach of local printing of letter-size paper as a general ODP service.

All Delta Data 7260 devices were upgraded to support SAFE enhancements.

An unclassified communications network was designed and installed to support the SAFE unclassified development system. Terminals and printers from various contractor sites are connected to this facility.

V. CONSUMPTION OF ODP RESOURCES

ODP's major customers are primarily internal to CIA. The Project Activity Report (PAR) system is the primary ODP tool for measuring consumption of ODP resources by Agency components. The top ten users of ODP services along with the percentage of ODP resources consumed are displayed in Table II.

ODP's major non-CIA customers are the Defense Intelligence Agency (DIA) for Project SAFE and the Office of Imagery Collection and Exploitation (O/ICE) of the Intelligence Community Staff for CAMS. The other Intelligence Community projects are DESIST and 4C. Additionally, ODP processing services continued to be used by Agency components in support of other Government Agencies. [redacted] 25X1

[redacted] 25X1

About 15% of the 7,059 queries of the Office of Central Reference (OCR) on-line bibliographic database were for other agencies, with NSA the leading consumer. In addition, the hard copy directories of foreign officials, produced by another OCR system, were widely disseminated to Government officials, and unclassified directories were made available to the public via the Library of Congress DOCEX Program.

As indicated above, ODP provides significant support to non-CIA customers, both in the form of direct support of inter-agency projects and indirectly, through its support of CIA customers with inter-agency responsibilities. With ODP's CIA and non-CIA customers, our relationships have been positive and supportive.

Table II: FY 1983 ODP Resource Consumption by Office

Rank	Customer	% ODP Resources Used in FY83*
1.	OICE/ICS	27.92
2.	OD&E/DDS&T	14.4
3.	OSWR/DDI	7.0
4.	OL/DDA	5.8
5	OCR/DDI	5.7
6.	IMS/DDO	5.6
7.	OF/DDA	5.0
8.	OP/DDA	2.9
9.	OC/DDA	2.6
10.	ODP/DDA	2.6
	TOTAL	79.5

*Percent Fiscal Year 1983 dollar costs for computer processing support and personnel; excludes Consolidated SAFE Project Office funds. The total is less than 100% due to unlisted offices.

V. FUTURE RESEARCH AND DEVELOPMENT PLANS

Research and Development (R&D) in support of ODP requirements is typically performed by the Information Systems Research Division (ISRD) of the Office of Research and Development, DDS&T. ISRD supports Agency-wide R&D in information systems. Most of these activities support several Agency customers with common requirements, so unique research in support of ODP is generally very limited. ODP provides its needs to DDS&T research planning through its participation in the DDA R&D Panel.

ODP joins with the Office of Security in focusing on information handling security and computer security issues. Similarly, ODP joins with the Office of Communications in another research area of joint concern, ADP communications strategies for the Headquarters area.

In 1983, ORD performed the following research with ODP considered the customer contact:

---Guard System Technology (Post-RECON)
A security technique that would permit the sharing of RECON (the Agency intelligence bibliographic database) with Intelligence Community users was developed in FY 1981 and 1982. This technique, referred to as RECON Guard utilizes a separate Guard processor to screen data provided to non-Agency users. Unanticipated costs of providing hardware and additional software have forced the evaluation phase to be suspended.

---Advanced Text Retrieval
The goal of this project is to develop and implement a mechanism for assessing alternative text search approaches, applications and devices. The 1983 activity to develop a prototype retrieval test bed will lead to a second prototype in 1984 in order to experiment with various test retrieval algorithms merging hardware and software search capabilities and to test against Agency applications.

---Database Management
Developing and implementing a general-purpose deductive inferencing mechanism for use with existing data bases is the focus of this project. It utilizes System Development Corporation's Deductively Augmented Data Manager software. The 1983 prototype application with an existing VM database will be further evaluated during 1984.

---System Design Evaluation Methodologies
The goal of this project is to develop a general-purpose system simulator facility to permit evaluation of system design and hardware configuration alternatives using the University of Maryland System Technology Evaluation Package. Improvements being made to a model of ODP's VM system are due to be completed in early 1984.

Other ORD projects that support other offices, and which are also of interest to ODP, include:

---Data Communications
This project, which began in 1983, involves an investigation of the feasibility of fiber-optics bus technology in support of OC.

---Audit Trail
The purpose of this effort is to improve the capability to monitor computer systems, through the use of audit trail data, to detect improper use. This project began in FY 1982 in support of OS.

VI. PRESENT/PROJECTED RESOURCE NEEDS

A summary of ODP's actual (FY 1983) and projected resource needs is presented below:

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*Dollars in thousands

During the next several fiscal years, resource requirements will continue to expand. In the personnel area, increases are due to the expanding number and complexity of major applications development projects, SAFE, and CAMS operations activities. The requirement to replace and enhance our existing corporate DDA software systems is a key factor in applications development growth. This major software recapitalization effort involves new systems, such as the Automated Compensation and Information System (ACIS); the Logistics Integrated Management System (LIMS); the Integrated Applicant Processing Systems (IAPS); the Personnel Resources Information Management System (PRIM); the Integrated Financial Management System (IFMS); and the Security Information Management System (SIMS). Development associated with ACIS and CAMS, as well as the general applications workload will increase. Additional personnel will also be required for SAFE support, as that system becomes operational in 1984. This workload will require approximately [redacted] additional ODP personnel in FY 1984 and FY 1985. (Non-personal services funds will also be required for those applications efforts which are developed under contract but which are not component funded.)

25X1

Processing requirements will also continue to grow in FY 1984 and 1985. Funding will be required for two additional CPUs, excluding SAFE. Additional hardware will be required to support the increasing quantity and complexity of ODP and user developed software. The workload and on-line storage requirements for VM time sharing, in particular, will continue to expand. This will necessitate continuing investment in more powerful mainframes and in additional terminals, disks and other peripheral equipment.

Other significant factors in the continuing increase of hardware and system software support are: the requirement for near-perfect availability as more and more time-critical Agency activities are on-line, the importance of personal computers and office automation tools in improving Agency effectiveness and productivity. The first will require continuing ODP investment in state-of-the-art hardware, software and associated support. Office automation will require ODP to develop system and communications software to enhance the VM time sharing service, and to develop our staff capacity to provide technical advice on the use and communications capabilities of personal computers. Critical to the success of the program is the availability of personnel with a high degree of strong interpersonal skills as well as strong highly technical skills.

ODP's most important resource is talented, motivated and trained personnel. Expanding ADP requirements in system development and processing services require an active recruitment of additional highly-skilled personnel. Further, new and existing staff must be rigorously trained and retained. A highly competitive marketplace for individuals with strong ADP skills, and particularly with Agency and special clearances, makes this an increasingly more difficult problem. In ODP's favor is an ever-expanding applications development portfolio of highly challenging state-of-the-art ADP projects and programs. Maintaining an atmosphere of high technology, excitement, growth and opportunity is essential to retaining and enhancing our personnel base. Creating and sustaining this environment will be a key challenge of the Eighties.